



COUNTRY CARDS – GLOBAL OBSERVATORY FOR PHYSICAL ACTIVITY – GoPA!

COUNTRY CARD APPENDIX

DEMOGRAPHIC INDICATORS

We used the World Bank list of 215 countries, with the exceptions that we divided the United Kingdom into England, Scotland, Wales and Northern Ireland, we merged China and Taiwan, and merged Palestine and West Bank and Gaza as requested by the contact persons from these countries. Our list therefore had 217 countries. For some analyses, we classified countries by income level, using the World Bank's classification. We also divided countries by world regions, following the World Health Organization regional offices' classification.

Total population = World Bank, country data

<http://data.worldbank.org/indicator/SP.POP.TOTL/countries/CO?display=default>

Life expectancy = World Bank, country data

<http://data.worldbank.org/indicator/SP.POP.TOTL/countries/CO?display=default>

GINI inequality index = World Bank, country data; CIA's World Factbook

The GINI index measures the extent to which the distribution of income or consumption expenditure among individuals or households within an economy deviates from a perfectly equal distribution. A GINI index of 0 represents perfect equality, while an index of 1 implies perfect inequality.

<http://data.worldbank.org/indicator/SI.POV.GINI?page=1>

Literacy rate = World Bank, country data; CIA's World Factbook; WHO Global Health Observatory Data.

<http://data.worldbank.org/indicator/SP.POP.TOTL/countries/CO?display=default>

https://www.cia.gov/Library/publications/the-world-factbook/fields/print_2103.html



Human development index = International Human Development Indicators, United Nations.
<http://hdr.undp.org/en/countries>

Deaths by non-communicable diseases = World Bank

Non-communicable diseases include cancer, diabetes mellitus, cardiovascular diseases, digestive diseases, skin diseases, musculoskeletal diseases, and congenital anomalies.

<http://data.worldbank.org/indicator/SH.DTH.NCOM.ZS>

Deaths related to physical inactivity = Lee IM, Shiroma EJ, Lobelo F, et al. Effect of physical inactivity on major non-communicable diseases worldwide: an analysis of burden of disease and life expectancy. Lancet 2012; 380: 219-29.

Deaths related to physical inactivity are the estimated population attributable fractions for all-cause mortality associated with physical inactivity (coronary heart disease, type 2 diabetes, breast cancer, colon cancer) by country.

Physical activity prevalence =

- **WHO Global Health Observatory Data/National country survey** providing prevalences according to the international recommendation.

Physical activity is defined as (According to the current WHO Guidelines): Aerobic activity is at least 150 minutes (2 hours and 30 minutes) a week of moderate-intensity, or 75 minutes (1 hour and 15 minutes) a week of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate- and vigorous-intensity aerobic activity. Aerobic activity should be performed in episodes of at least 10 minutes, and preferably, it should be spread throughout the week.

Based on self-reported physical activity captured using the GPAQ (Global Physical Activity Questionnaire), the IPAQ (International Physical Activity Questionnaire) or a similar questionnaire covering activity at work/in the household, for transport, and during leisure time.

Repository: <http://apps.who.int/gho/data/?theme=main>

<http://apps.who.int/gho/data/node.main.A860?lang=en>

Built based as 1- the physical inactivity percent found at the WHO Global Health Observatory Data.



- Eurobarometer data

Physical activity prevalence was calculated using Eurobarometer 80.2 data (European commission, 2014). Percent of population REGULARLY engaged (3 times per week or more) in sport, exercise or other physical activities (cycling from one place to another, dancing, gardening, etc.).

Results represents percentages of people who chose answers 1 (5 times a week or more) or 2 (3-4 times a week) on any of Eurobarometer QD1 or QD2 questions.

QD1 question - How often do you exercise or play sport?

QD2 question - How often do you engage in other physical activity such as cycling from one place to another, dancing, gardening, etc.?

Reference: *European Commission, Brussels (2014): Eurobarometer 80.2, Special Eurobarometer 412, November-December 2013. TNS OPINION & SOCIAL, Brussels [Producer]. GESIS Data Archive, Cologne. ZA5877 Data file Version 1.0.0, doi:10.4232/1.12010*

In order to be able to use the data, this note was included in the card: "The European Union does not endorse changes, if any, made to the original data and, in general terms to the original survey, and such changes are the sole responsibility of the author and not the EU"

SURVEILLANCE AND POLICY STATUS

Physical activity plan = An internet search was conducted to determine whether each of the 217 world countries had a physical activity plan. We searched the WHO MiNDbank database of resources covering mental health, substance abuse, disability, general health, human rights and development

(<http://www.mindbank.info/collection/country>, <http://www.who.int/nmh/countries> and <http://hiip.wpro.who.int/portal/Dashboards/Noncommunicablediseases/NCDdashboards/TabId/210/ArtMID/1088/ArticleID/202/Default>), google and PubMed from September to October 2014. The names of the plans are in english. Also we asked the main contact in each country if there was an identifiable physical activity plan available.

National survey including physical activity questions = An internet search was conducted to determine whether each of the 217 world countries (according to the United Nations - UN) had a national survey including physical activity questions or a physical activity surveillance system. From July 2014 to September 2014, we followed a stepwise methodology to search for national physical activity surveys or physical activity surveillance systems. The steps were:



1. The Demographic & Health Survey (DHS) website was reviewed in order to determine which countries had a national survey that included physical activity questions. The countries survey characteristics section was reviewed.
2. If step 1 did not provide the information for a specific country, the website <http://www.who.int/chp/steps/reports/en/> was reviewed to complete the information.
3. If the prior step retrieved no results, a google search was conducted including the terms “national survey” and “physical activity questions” and “*name of each country*”.
4. The fourth step was to search in google for the information of the countries from which no data was obtained. Terms were “ncd” and “risk factors” and “national survey”.
5. For the missing data, a fifth search was done with the terms “*name of each country*” and “national survey” and “ncd”.
6. Some of the national surveys were found using the surveys above:
http://www.paho.org/hq./index.php?option=com_content&view=article&id=3070%3Asurvey-on-diabetes%2Chypertension-and-chronic-disease-risk-factors%3A-central-america&catid=1415%3Ahsd0203b-cn-cd-integrated-management-content&Itemid=1&lang=pt
And
http://apps.who.int/healthinfo/systems/surveydata/index.php/catalog/whs#_r=&collection=&country=&dtype=&from=2000&page=3&ps=&sk=&sort_by=nation&sort_order=&to=2010&topic=&view=s&vk=
7. Subsequently some files were examined:
 - 7.1. http://www.univie.ac.at/enhr/downloads/enhrii_book.pdf
 - 7.2. file:///C:/Users/COORTE15/Downloads/NCD%20Indicator%20sources-%20final.pdf
8. The last step was to revise all of the information in the WHO website (STEPS):
<http://www.who.int/chp/steps/reports/en/>

In addition to this search, we asked the main contact in each country if there was an identifiable physical activity survey available and periodicity (year of the most recent, last and next one).

RESEARCH CHARACTERISTICS

Articles related to physical activity and public health = PubMed

In July 2014, we searched MEDLINE for studies on physical activity in each of the countries. The search terms were “physical activity” (title or abstract) and country name anywhere in the title, abstract, text or affiliation. The article had to be published in 2013 with dates from 01/01/2013-31/12/2013. Reviews, meta-analyses, case reports, editorials, commentaries, national plans, surveillance papers, discussions or letters to the editor were included. There



were no age or language restrictions. Studies on exercise physiology or whose outcomes were not related to physical activity were excluded.

Country contacts reviewed the papers proposed for inclusion, confirmed appropriate papers, and suggested additional papers for consideration.

Number of physical activity publications in PubMed in 2013 (Absolute value). Was defined as the number of physical activity articles meeting the search inclusion criteria.

Number of active researchers = PubMed

The number of physical activity active researchers was determined reviewing and listing all the authors in the chosen papers for each country.

Average connection among authors = PubMed

The average of interactions between actors (if they wrote a paper together) according to the social network analysis in gephi 8.02.

Identified publishing groups= PubMed

Defined as the number of research/publishing groups according to the social network analysis in gephi 8.02

Researchers per million people = PubMed and World Bank

Number of physical activity articles in the country per each million inhabitants (1 researcher/country's population)*1.000.000 or (1 researcher/ country's population)*10.000 in countries with less than 1 million inhabitants.

Articles per million people = PubMed and World Bank

Number of physical activity articles in the country per each million inhabitants (1 article/country's population)*1.000.000 or (1 article/ country's population)*10.000 in countries with less than 1 million inhabitants.

Ranking: country contribution to physical activity research worldwide in 2013= PubMed and World Bank



Built in 5 steps:

- i. PubMed search for studies on physical activity in each of the world countries during 2013.
- ii. The number of physical activity articles meeting the inclusion criteria (absolute value) was compared to the total number of physical activity articles obtained in PubMed.
- iii. The percentage of physical activity related publications per country was determined.
- iv. Number of expected physical activity publications per country was determined.
- v. The number of physical activity articles meeting the inclusion criteria (absolute value) was divided by the expected physical activity publications per country obtaining the country contribution to physical activity publications in 2013 (weighted value)

How was the ranking calculated? Brazil's example

- i. PubMed number studies on physical activity in 2013: a) worldwide= 6649 articles, and b) in Brazil in 2013 = 217 articles.
- ii. Number of articles related to physical activity and public health meeting the inclusion criteria (absolute value) = 96 articles.
- iii. Percentage of physical activity related publications per country was determined ($96/217 = 0.44$)
- iv. Number of expected physical activity publications per country was determined = ($0.44239 * 6649$) = 2941.4
- v. Country contribution to physical activity publications in 2013 (weighted value) = ($96/2941.4 = 0.0326 = 3.26\%$)

Ranking: country contribution to physical activity research worldwide in 2013= 7th position equivalent to 3.26% of physical activity research worldwide.